PROJECT DESCRIPTION

GENERAL

THIS PORTION OF THE PROJECT INVOLVES THE INSTALLATION OF A NEW SIGNAL AT THE RECONSTRUCTED INTERSECTION AT MD 450 (ANNAPOLIS ROAD) AND MD 953 (GLENN DALE ROAD) IN PRINCE GEORGES COUNTY. MD 450 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

INTERSECTION OPERATION

THIS INTERSECTION IS TO OPERATE INITIALLY IN A NEMA SEVEN PHASE, FULL-TRAFFIC-ACTUATED MODE. THERE WILL BE AN EXCLUSIVE/PERMISSIVE LEFT TURN FOR THE EASTBOUND AND WESTBOUND MOVEMENTS OF MD 450 AND A NORTHBOUND TO EASTBOUND RIGHT TURN OVERLAP WILL BE INCLUDED. THE THROUGH MOVEMENTS ON MD 450 WILL OPERATE CONCURRENTLY. THE EXCLUSIVE/PERMISSIVE LEFT TURN FOR THE NORTHBOUND MOVEMENT ON MD 953 SHALL OPERATE BETWEEN THE HOURS OF 7 A.M. AND 9 A.M. - MONDAY TO FRIDAY AND AN EASTBOUND TO SOUTHBOUND RIGHT TURN OVERLAP WILL BE INCLUDED. AT ALL OTHER TIMES, IT SHALL BE OMITTED AND THE THROUGH MOVEMENTS ON MD 953 WILL OPERATE CONCURRENTLY.

CONTROLLER REQUIREMENTS

INSTALL AN EIGHT PHASE, FULL-TRAFFIC-ACTUATED, SOLID STATE DIGITAL CONTROLLER WITH NINE TWO-CHANNEL TIME DELAY OUTPUT LOOP DETECTOR AMPLIFIERS, INTERSECTION MONITOR (WITH BATTERY BACK-UP FOR PHONE DROP), TELEMETRY MODULE, ISOLATION BOARD, AND SPECIAL RELAY TO BE HOUSED IN A NEMA SIZE 6 BASE-MOUNTED CABINET.

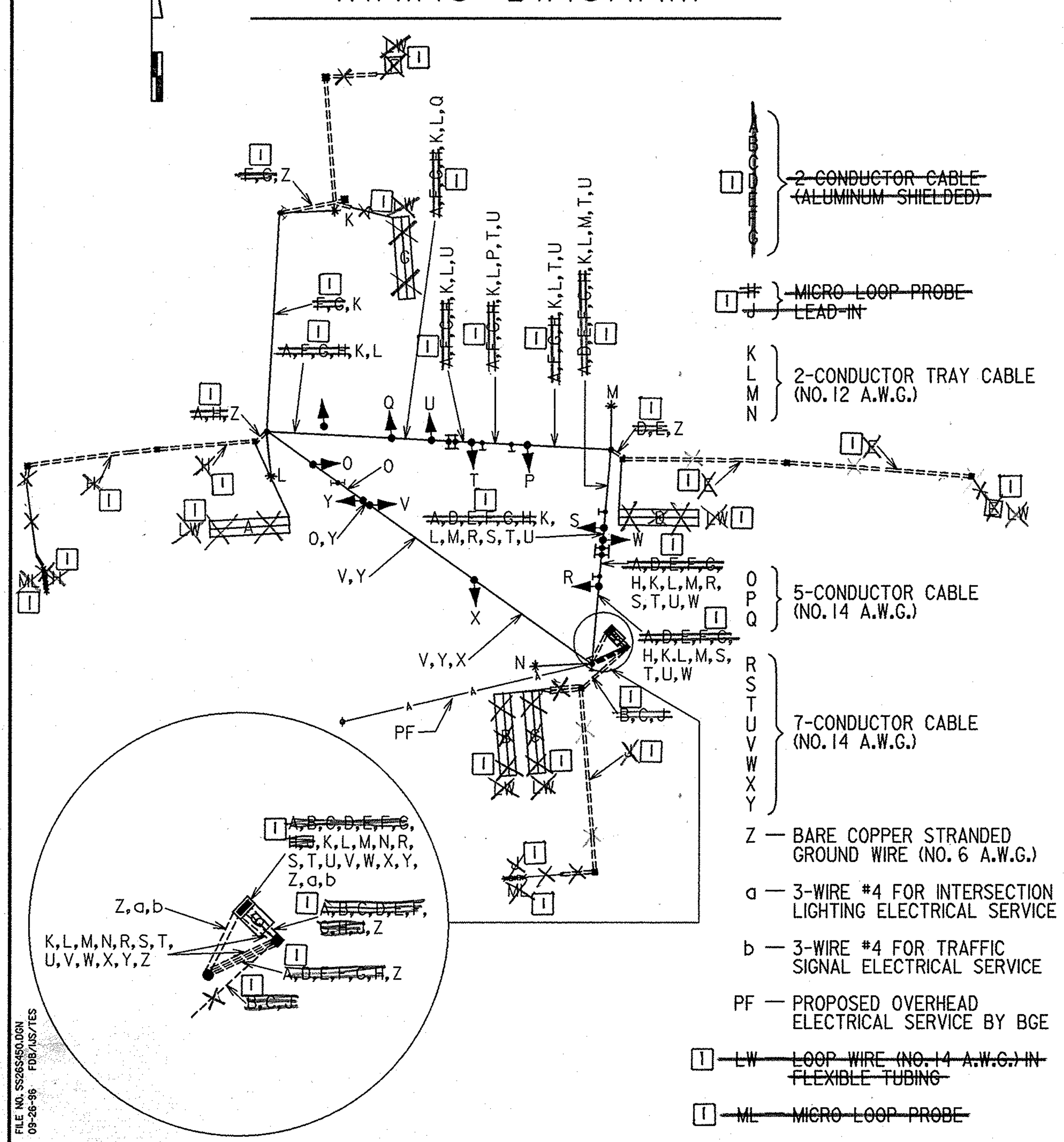
SPECIAL NOTE

THE INTERCONNECT BETWEEN THIS INTERSECTION AND THE MD 450 AND MD 704 INTERSECTION IS TO BE REMOVED DURING THIS PHASE.

ALL UNDERGROUND AND OVERHEAD UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC AND ARE NOT TO BE CONSIDERED COMPLETE BECAUSE THESE UNDERGOUND AND OVERHEAD UTILITIES MAY BE MODIFIED PRIOR TO AND DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL EQUIPMENT WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE PROJECT ENGINEER IMMEDIATELY.

72 HOURS PRIOR TO ANY WORK ON THE TRAFFIC SIGNALS, THE CONTRACTOR SHALL NOTIFY THE DISTRICT 3 TRAFFIC SECTION REPRESENTATIVE, MR. RICHARD BUETTNER (301-513-7316) AND THE SIGNAL OPERATIONS SUPERVISOR, MR. EDWARD RODENHIZER (410-787-7652).

WIRING DIAGRAM



EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE ADMINISTRATION

CATEGORY CODE NO.	SPEC. SECTION	QUANTITY	DESCRIPTION
960015	814	3 EA.	12 IN. I WAY 3 SECTION (R,Y,G) ADJUSTABLE POLYCARBONATE VEHICLE SIGNAL HEAD WITH SPAN MOUNTING HARDWARE AND TUNNEL VISORS
960020	814	5 EA.	12 IN. I WAY 5 SECTION (R,Y,G,YA,GA) ADJUSTABLE POLYCARBONATE VEHICLE SIGNAL HEAD WITH SPAN MOUNTING HARDWARE AND TUNNEL VISORS
963007	817	9 EA.	TWO-CHANNEL LOOP DETECTOR AMPLIFIER (DELAY OUTPUT)
971017	816	1 EA.	EIGHT PHASE, FULL-TRAFFIC-ACTUATED, SOLID STATE DIGITAL CONTROLLER WITH INTERSECTION MONITOR AND BATTERY BACK-UP FOR PHONE DROP, TELEMETRY MODULE, ISOLATION BOARD AND SPECIAL RELAY HOUSED IN NEMA SIZE "6" BASE-MOUNTED CABINET
973023	813	149.75 S.F.	SHEET ALUMINUM SIGNS - 3 EACH R10-12 (36" X 42") - SPAN MOUNT - 2 EACH R3-5R (30" X 36") - SPAN MOUNT - 3 EACH D3-2 (VAR. X 16") - SPAN MOUNT - 2 EACH ASSOCIATED SHIELD ASSEMBLY (30" X 51") - POLE MOUNT - 2 EACH ASSOCIATED SHIELD ASSEMBLY (48" X 75") - POLE MOUNT
900000	814	3 EA.	8 IN./12 IN. 1 WAY 5 SECTION (8" R,Y,G - 12" YA,GA) ADJUSTABLE POLYCARBONATE VEHICLE SIGNAL HEAD WITH SPAN MOUNTING HARDWARE AND TUNNEL VISORS
1 ~~900000~~	~~810~~	~~1 EA.~~	~~MICRO LOOP PROBE SET WITH 1000 FT. LEAD-IN~~
1 ~~900000~~	~~810~~	~~1 EA.~~	~~MICRO LOOP PROBE SET WITH 500 FT. LEAD-IN~~

EQUIPMENT LIST "C"

C. EXISTING EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION, 7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076. THE CONTRACTOR SHALL NOTIFY THE SHA AT (410) 787-7652 AT LEAST THREE DAYS IN ADVANCE OF DELIVERY.

QUANTITY	DESCRIPTION
1 EA.	POLE MOUNTED CABINET/CONTROLLER

PHASE DIAGRAM

	1	2	3	4	5	6	7	8	9	10	11	
PHASE 1 + 5	← R/G	← R/G	R	← R/G	← R/G	R	R	R	R/G →	R	R	
1 + 5 CHANGE TO PHASE 1 + 6, PHASE 2 + 5 OR PHASE 2 + 6												
PHASE 1 + 6	← G/G	← G/G	G	R	R	R	R	R	R	R	R	
1 CHANGE	← G/Y	← G/Y	G	R	R	R	R	R	R	R	R	
PHASE 2 + 5	R	R	R	← G/G	← G/G	G	R	R	R/G →	R	R	
5 CHANGE	R	R	R	← G/Y	← G/Y	G	R	R	R/G →	R	R	
PHASE 2 + 6	G	G	G	G	G	G	R	R	R	R	R	
2 + 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	
PHASE 3 ALT + 8	R	R	R/G →	R	R	R	← G/G	← G/G	G	R	R	
3 ALT CHANGE	R	R	R/Y →	R	R	R	← G/Y	← G/Y	G	R	R	
PHASE 4 + 8	R	R	R	R	R	R	G	G	G	G	G	
4 + 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	

EQUIPMENT LIST "B"

F H W A REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD	SEE TITLE SHEET	368	465

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

CATEGORY CODE NO.	SPEC. SECTION	QUANTITY	DESCRIPTION
114245	104	110 L.F.	24 IN. WHITE REMOVABLE PREFORMED PAVEMENT MARKING TAPE
203030	205	5 C.Y.	TEST PIT EXCAVATION
801004	801	11.7 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
802501	810	85 L.F.	FURNISH AND INSTALL NO. 6 A.W.G STRANDED BARE COPPER GROUND WIRE
1 ~~805011~~	~~805~~	~~70 L.F.~~	~~FURNISH AND INSTALL 1 IN. ELECTRICAL CONDUIT - GALVANIZED SLEEVE~~
805125	805	1010 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 40 RIGID PVC CONDUIT - TRENCHED
805135	805	26 L.F.	FURNISH AND INSTALL 3 IN. SCHEDULE 40 RIGID PVC CONDUIT - TRENCHED
805140	805	16 L.F.	FURNISH AND INSTALL 4 IN. SCHEDULE 40 RIGID PVC CONDUIT - TRENCHED
1 ~~805160~~	~~805~~	~~20 L.F.~~	~~FURNISH AND INSTALL 1 IN. LIQUID TIGHT NON-METALLIC CONDUIT FOR DETECTOR SLEEVE~~
810010	810	120 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 1 CONDUCTOR (NO. 4 A.W.G. THHN/THWN)
811001	811	11 EA.	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813010	813	4 EA.	BAND SIGN TO SIGN SUPPORT
813015	813	78.5 S.F.	INSTALL OVERHEAD SIGN
837001	804	5 EA.	FURNISH AND INSTALL GROUND ROD - 3/4 IN. DIAMETER X 10 FT. LENGTH
838002	807	1 EA.	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT (240/480V, 1 PHASE, 3 WIRE SYSTEM)
860015	814	3 EA.	INSTALL 12 IN. I WAY 3 SECTION (R,Y,G) POLYCARBONATE SIGNAL HEAD - SPAN MOUNT
860020	814	5 EA.	INSTALL 12 IN. I WAY 5 SECTION (R,Y,G,YA,GA) POLYCARBONATE SIGNAL HEAD - SPAN MOUNT
1 ~~861104~~	~~810~~	~~2062 L.F.~~	~~FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)~~
861107	810	80 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G)
861108	810	1213 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)
861116	810	902 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.)
1 ~~862101~~	~~810~~	~~2296 L.F.~~	~~FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 A.W.G.)~~
1 ~~862102~~	~~815~~	~~708 L.F.~~	~~FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)~~
866103	818	2 EA.	FURNISH AND INSTALL 15 FT. LIGHTING ARM ON SIGNAL STRUCTURE
866104	818	2 EA.	FURNISH AND INSTALL 20 FT. LIGHTING ARM ON SIGNAL STRUCTURE
867103	818	4 EA.	FURNISH AND INSTALL 12 IN. X 30 FT. STRAIN POLE.
869101	819	360 L.F.	FURNISH AND INSTALL STEEL SPAN WIRE - 1/4 IN. DIAMETER
869102	819	440 L.F.	FURNISH AND INSTALL STEEL SPAN WIRE - 3/8 IN. DIAMETER
871117	816	1 EA.	INSTALL EIGHT PHASE (FULLY ACTUATED) CONTROLLER AND CABINET - BASE MOUNT
800000	805	15 L.F.	FURNISH AND INSTALL 2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
800000	814	3 EA.	INSTALL 8 IN./12 IN. I WAY 5 SECTION (8" R,Y,G - 12" YA,GA) POLYCARBONATE SIGNAL HEAD - SPAN MOUNT
800000	806	4 EA.	FURNISH AND INSTALL 250 WATT HIGH PRESSURE SODIUM VAPOR LUMINAIRE WITH PHOTO-CELL
1 ~~800000~~	~~810~~	~~2 EA.~~	~~INSTALL MICRO LOOP PROBE SET~~
800000	XXX	LUMP SUM	REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT

1 RED LINE REV. NO. 1
7-14-97

TEMPORARY SIGNAL PHASE III

DWG. NO. TS - 22

THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND

REVISIONS

Ⓒ AUGUST 1996 - WTB MODIFY EXISTING SIGNAL SHA NO. PG9005171 — JDM

Ⓑ 2/91 CHANGE SIGNALS TO POLYCARBONATE, ADJUST SPAN SHA NO. 855-2503.039 — JT, SR, ETP, TH

Ⓐ INSTALL E/P LEFT TURN FOR NB MD 953 — DBD, SR, DZ, ETP, TH

APPROVALS

ASST. DIVISION CHIEF, TEDD

ASST. DISTRICT ENGINEER, TRAFFIC

CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION

DIRECTOR, OFFICE OF TRAFFIC & SAFETY

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION

MD 450 (ANNAPOLIS ROAD) AT MD 953 (GLENN DALE ROAD)

LOG MILE NO. 1604507.9 (0) DATE 9/-/90

DRAWN BY: N/A	F.A.P. NO. N/A	PLAN SHEET NO.:	SHEET NO.
CHECK BY: N/A	S.H.A. NO. N/A		
SCALE: NONE	COUNTY PRINCE GEORGES	TS-3083C-X2-GI	368 OF 465